

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ARASHI VISION (U.S.) LLC (D/B/A INSTA360),
Petitioner,

v.

GOPRO, INC,
Patent Owner.

IPR2024-01164
Patent 10,958,840 B2

Before WILLIAM V. SAINDON, NABEEL U. KHAN, and
BRIAN D. RANGE, *Administrative Patent Judges*.

SAINDON, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. Background and Summary

Arashi Vision (U.S.) LLC (d/b/a Insta360) (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1–21 (“the challenged claims”) of U.S. Patent No. 10,958,840 B2 (Ex. 1001, “the ’840 patent”). GoPro, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 7 (“Prelim. Resp.”).¹

We have authority to determine whether to institute an *inter partes* review under 35 U.S.C. § 314(b) and 37 C.F.R. § 42.4(a). The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted unless “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” For the reasons provided below, we determine that Petitioner has demonstrated a reasonable likelihood that at least one claim of the ’840 patent is unpatentable, and we institute an *inter partes* review. 37 C.F.R. § 42.108(a).

Our findings of fact, conclusions of law, and reasoning discussed below are made for the sole purpose of determining whether the Petition meets the threshold for initiating review. This decision to institute trial is not a final decision as to the patentability of any challenged claim or the construction of any claim limitation.

¹ A redacted, publicly-accessible version of the Preliminary Response has been filed as Paper 8.

B. Real Parties in Interest

The parties both assert that they are the sole real parties in interest.
Pet. 80; Paper 5, 2 (Patent Owner’s Mandatory Notice).

C. Related Matters

The parties both identify *In the Matter of Certain Cameras, Camera Systems, and Accessories Used Therewith*, Inv. No. 337-TA-1400 (USITC) and *GoPro, Inc. v. Arashi Vision Inc.*, No. 8:24-cv-00681-HDE-JCV (C.D. Cal.) as related matters outside the USPTO. Pet. 80–81; Paper 5, 2.

Related matters within the USPTO include: IPR2024-00984 (US Pat. 10,015,413); IPR2024-01052 (US Pat. 11,336,832); IPR2024-01165 (US Pat. 10,958,840); and IPR2024-01186 (US Pat. 10,574,894). Paper 5, 2.

D. Prior Art and Asserted Grounds

Petitioner’s grounds rely on the following prior art references:

Name	Reference	Exhibit No.
Kwatra	US Pat. 8,531,535 B2, iss. Sept. 10, 2013	1012
Sokeila	US Pat. 8,994,838 B2, iss. Mar. 31, 2015	1008
Karpenko	US Pat. 9,071,756 B2, iss. June 30, 2015	1009
Bell	US Pat. 10,027,893 B2, iss. July 17, 2018	1006
Shi	US Pat. 10,462,370 B2, iss. Oct. 29, 2019	1007
Corey	US Pub. No. 2013/0044228 A1, pub. Feb. 21, 2013	1011
Bell Paper	Steven Bell, Alejandro Troccoli, and Kari Pulli, “A Non-Linear Filter for Gyroscope-Based Video Stabilization,” <i>ECCV (4), Vol. 8692 of Lecture Notes in Computer Science</i> , pp. 294–308, Springer (2014).	1005

Petitioner asserts that the challenged claims would have been unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–3, 5, 8–11, 14, 16, 18, 19	103	Bell, Shi
4, 20	103	Bell, Shi, Karpenko
6, 7, 21	103	Bell, Shi, Bell Paper
12	103	Bell, Shi, Sokeila
13	103	Bell, Shi, Kwatra
15	103	Bell, Shi, Corey
17	103	Bell, Shi, Kwatra, Corey

Petitioner relies on the testimony of Aggelos Katsaggelos, Ph.D, a professor of Electrical and Computer Engineering who has taught courses in “digital image and video processing, including image and video compression, algorithms, analysis, and enhancement techniques.”

Ex. 1003 ¶ 6. Patent Owner relies on the testimony of Hassan Foroosh, Ph.D, a professor of Computer Science who has taught courses in “computer vision and 3D modeling, including 3D Computer Vision, Image Processing, Special Topics in 3D Computer Vision, and Visual Simulation.”

Ex. 2001 ¶¶ 8–9.

E. Overview of the '840 Patent

The '840 patent describes itself as follows:

Visual content is captured by an image capture device during a capture duration. The image capture device[] experiences change in position during the capture duration. The trajectory of the image capture device is smoothed based on a look ahead of the trajectory. A punchout of the visual content is determined based on the smoothed trajectory. The punchout of the visual content is used to generate stabilized visual content.

Ex. 1001, Abstract.

F. Challenged Claims

Claims 1–21 are challenged. Claims 1 and 16 are independent.

Claim 1 is reproduced below.

1. A image capture system that stabilizes videos, the image capture system comprising:

a housing of an image capture device;

an optical element carried by the housing and configured to guide light within a field of view to an image sensor;

the image sensor carried by the housing and configured to generate a visual output signal conveying visual information based on light that becomes incident thereon during a capture duration, the visual information defining visual content having the field of view, the field of view being larger than a size of a viewing window for generating stabilized visual content;

a position sensor carried by the housing and configured to generate a position output signal based on positions of the housing during the capture duration, the position output signal conveying position information that characterizes rotational positions of the housing at different moments within the capture duration; and

one or more physical processors configured by machine-readable instructions to:

determine a trajectory of the housing during the capture duration based on the position information, the trajectory reflecting the rotational positions of the housing at the different moments within the capture duration, the trajectory including a first portion corresponding to a first moment within the capture duration and a second portion corresponding to a second moment subsequent to the first moment within the capture duration;

determine a smoothed trajectory of the housing based on a look-ahead of the trajectory and one or more of a weight-balance parameter, a low-light high-pass parameter, and/or a stickiness parameter, the lookahead of the trajectory including use of a subsequent portion of the trajectory to determine a preceding

portion of the smoothed trajectory such that a portion of the smoothed trajectory corresponding to the first portion of the trajectory is determined based on the second portion of the trajectory, the smoothed trajectory having smoother changes in the rotational positions of the housing than the trajectory, wherein the determination of the smoothed trajectory based on the look-ahead of the trajectory includes use of a temporal horizon of motion experienced by the image capture device, the temporal horizon enabling approximation of intentional motion of the image capture device while causing a delay in the determination of the smoothed trajectory;

determine placement of the viewing window for the visual content with respect to the field of view of the visual content based on the smoothed trajectory of the housing, the viewing window defining one or more extents of the visual content to be included within a punchout of the visual content; and

generate the stabilized visual content of a video based on the viewing window, the stabilized visual content including the punchout of the one or more extents of the visual content within the viewing window, wherein inclusion in the stabilized visual content of the one or more extents of the visual content within the viewing window effectuates stabilization of the visual content via selective cropping.

II. ANALYSIS

A. Legal Standards Used in the Merits Analysis

“In an IPR, the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)); *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d

1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

A claim is unpatentable under 35 U.S.C. § 103 if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious . . . to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when in evidence, objective indicia of non-obviousness. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

Petitioner asserts that:

A person of ordinary skill in the art (POSITA) in the field of the ’840 patent would have a bachelor’s degree in engineering or computer science, or equivalent field, and two years of experience working on image or video processing, or digital cameras. Alternatively, a POSITA would have four years of experience working on image or video processing, or digital cameras. An advanced graduate degree in the disciplines cited above may make up for the work experience indicated above.

Pet. 5 (citing Ex. 1002 ¶ 32). Patent Owner applies the same definition.

Prelim. Resp. 9–10. We use this agreed-upon definition for purposes of this Decision.

C. Claim Construction

Under 37 C.F.R. § 42.100(b), we apply the claim construction standard set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed.

Cir. 2005) (en banc). That is, “the words of a claim ‘are generally given their ordinary and customary meaning’ . . . that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Id.* at 1312–13.

The parties both assert that no terms require a formal construction. Pet. 5–6; Prelim. Resp. 10. Reviewing the arguments set before us, however, we determine that a preliminary construction of “low-light high-pass parameter” is required to issue this Decision. No other terms require construction at this time. *Realtime, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

A dispute before us is whether Shi discloses a low-light high-pass parameter. *See, e.g.*, Pet. 28 (“Shi discloses using a low-light high-pass parameter—the ‘coefficient based on the motion blur kernel.’”); Prelim. Resp. 11 (“Shi . . . does not disclose nor suggest the . . . low-light high-pass parameter”). As Patent Owner characterizes it, the low-light high-pass parameter must be “dynamic,” “environment-specific,” and/or “proactive.” *See, e.g.*, Prelim. Resp. 11, 12, 14–17.

Looking to the claim language itself, we note that the claim mentions “low-light high-pass parameter” once, in the context of listing it as one of three alternative things covered by the claim. Ex. 1001, 30:35–38. We find the specification of the ’840 patent discusses the low-light high-pass parameter in two paragraphs. *Id.* at 21:59–22:21. In these passages, the ’840 patent states that the low-light high-pass parameter may be “a

parameter that controls the amount/strength of smoothing performed to generate the smoothed trajectory.” *Id.* at 21:59–61. The parameter may take a value corresponding to the amount of motion blur compensation to be used. *Id.* at 22:8–21. Thus, the specification states that the low-light high-pass parameter is used to control the amount of motion blur compensation.

Patent Owner did not offer any explicit claim construction analysis justifying addition of further limitations to “low-light high-pass parameter” such as “proactive,” “dynamic,” “environment-specific,” or the like. The specification does not appear to require these features in a low-light high-pass parameter. Based on this preliminary record, we see no reason to add these additional limitations to the claim.

Instead, based on the intrinsic evidence and the arguments before us at this stage of the proceeding, we understand a “low-light high-pass parameter” in view of the specification to be a parameter that controls the amount or strength of smoothing used in motion blur compensation.

*D. Asserted Obviousness Over Bell and Shi
(Claims 1–3, 5, 8–11, 14, 16, 18, and 19)*

Petitioner asserts that claims 1–3, 5, 8–11, 14, 16, 18, and 19 would have been obvious in view of Bell and Shi. Pet. 8–62. The present dispute between the parties can be resolved by an analysis of independent claim 1; we limit our analysis to that claim.

Independent claim 1 is directed to an “image capture system that stabilizes videos.” Ex. 1001, 30:6–7. The image capture system has a housing, optical element, image sensor, and position sensor. *Id.* at 30:8–18. In addition, it has one or more processors that determine: (i) a trajectory of the housing, (ii) a smoothed trajectory of the housing, based on a look-ahead

trajectory and a low-light high-pass parameter, (iii) placement of a viewing window based on the smoothed trajectory, and (iv) stabilized video content. *Id.* at 30:19–67. The dispute before us is limited to item (ii) of this list, specifically to the low-light high-pass parameter.

At a high level, Petitioner’s ground relies on Bell to teach each limitation of the claim except the low-light high-pass parameter, which Petitioner asserts is taught by Shi. *See* Pet. 10–48 (*passim*); *id.* at 28–31 (discussion of Shi). We provide a brief overview of Bell and Shi before turning to the parties’ positions and our analysis.

1. Bell

Bell discusses real-time video stabilization for mobile devices based on on-board motion sensing. Ex. 1006, Abstract. Bell states that “most mobile cameras use a rolling shutter, in which each horizontal scan line of pixels is exposed and read out in sequence.” *Id.* at 1:22–24. When the camera is moving, however, “each image row captures a slightly different scene, causing motion distortions.” *Id.* at 1:24–26. For example, vertical displacement causes the image to be squeezed or stretched vertically, whereas horizontal motions shear the image so that it appears to tilt to the left or to the right. *Id.* at 1:26–29, 7:9–39, Fig. 2 (noting image 220 depicting a squeezed image due to vertical motion and image 230 depicting a sheared image due to horizontal motion). To compensate for these motion effects, Bell proposes to model the camera’s physical movement and orientation and then apply a “smoothing algorithm” that uses past, current, and future frames in a “look-ahead buffer.” *Id.* at 8:57–67, 10:14–16; *see generally id.* at 7:40–10:37 (further detail).

2. *Shi*

Shi also discusses a video stabilization scheme that uses “look-ahead frames” to compensate for motion. Ex. 1007, 1:60–65. Shi notes a new problem that may occur when video is stabilized, namely, that motion blur in the stabilized video “may become very noticeable and unnatural.” *Id.* at 17:59–63. Accordingly, to solve this problem, Shi proposes a method of compensating for the motion blur by allowing the virtual camera’s position to move based on the camera’s real position. *Id.* at 11:12–27, 17:53–18:40. The extent of this is determined using a coefficient to weight an interpolation between frames. *Id.* at 18:30–31.

3. *Petitioner’s Ground*

Petitioner asserts that Bell teaches an image capture system that has a housing, optical element, image sensor, and position sensor as claimed. Pet. 10–20. Petitioner then asserts that Bell teaches one or more processors as claimed that determine: (i) a trajectory of the housing, (ii) a smoothed trajectory of the housing based on a look-ahead trajectory, (iii) placement of a viewing window based on the smoothed trajectory, and (iv) stabilized video content. *Id.* at 20–26, 31–48. These aspects of the ground are not in dispute at this time.

The disputed “low-light high-pass parameter” limitation is part of the broader limitation: “determining a smoothed trajectory of the housing based on a look-ahead of the trajectory and . . . a low-light high-pass parameter.” Petitioner starts with Bell for determining a smoothed trajectory based on a look-ahead. Pet. 26–27. In particular, Petitioner points to Bell’s “smoothing algorithm,” which “use[s] data from a look-ahead buffer to calculate a smoother path.” *Id.* (citing Ex. 1006, 8:63–67, 10:14–16). For the low-light

high-pass parameter, Petitioner points to Shi's motion-blur correction method. *Id.* at 28–30. Specifically, Petitioner identifies a “coefficient based on the motion blur kernel” that controls the amount of smoothing as the claimed low-light high-pass parameter. *Id.* at 28 (citing Ex. 1003 ¶¶ 110–120; Ex. 1007, 18:30–33).

To explain why it would have been obvious to combine these teachings, Petitioner first notes that both Bell and Shi are directed towards the same concern, namely, video quality that is compromised by shaking. Pet. 30 (citing Ex. 1006, Abstract, 1:17–21; Ex. 1007, Abstract, 1:7–12). Petitioner identifies a desire in the art to correct motion blur. *Id.* (citing Ex. 1007, 1:13–15; Ex. 1003 ¶ 123). Thus, Petitioner asserts that it would have been obvious to improve Bell's video stabilization techniques by using the motion blur compensation technique in Shi. *Id.*

4. *Analysis*

Our analysis focuses on the disputed issues, namely, whether Shi discloses a low-light high-pass parameter (Prelim. Resp. 10–17), whether Petitioner has established a reason to combine having a reasonable expectation of success (*id.* at 18–23), and whether objective indicia establish non-obviousness (*id.* at 23–31).

a) “*low-light high-pass parameter*”

Petitioner identifies a motion-blur correction method in Shi that uses a coefficient as the claimed low-light high-pass parameter. Pet. 28–30. Patent Owner argues that “Shi makes no mention of low-light conditions.” Prelim. Resp. 11. The absence of a low-light condition discussion in Shi, however, is not dispositive because “claims *as a whole* must be analyzed in light of

the disclosure to see if the article defined thereby is distinguishable in fact, vis-à-vis *in verbis*, over the prior art.” *Application of Neugebauer*, 330 F.2d 353, 356 (CCPA 1964). In our claim construction section, we reviewed the ’840 patent specification to better understand what a “low-light high-pass parameter” is, and we determined on this record that it is a smoothing parameter for controlling motion blur correction. Ex. 1001, 21:59–61 (“A low-light high-pass parameter may refer to a parameter that controls the amount/strength of smoothing performed.”), 22:8–10 (“A low-light high-pass parameter may range between 0 and 1, with 0 corresponding to no motion blur compensation and 1 corresponding to full motion blur compensation.”). Like Shi, the ’840 patent does not explicitly describe the low-light high-pass parameter as being specifically controlled by an amount of light. This may be because, as Petitioner explains, a person of ordinary skill in the art would know that low-light conditions cause motion blur in the first place. Pet. 28 (citing Ex. 1003 ¶ 111); *see also Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1384 (Fed. Cir. 1986) (“a patent need not teach, and preferably omits, what is well known in the art”) (citing *Lindemann Maschinenfabrik GMBH v. Am. Hoist & Derrick*, 730 F.2d 1452, 1463 (Fed. Cir. 1984)). In other words, on this record, it appears reasonable to conclude that a “low-light high-pass parameter” is another name for a motion blur correction parameter. Under this understanding, we determine that Petitioner has met its threshold showing that Shi’s motion blur compensation coefficient is a low-light high-pass parameter, notwithstanding the difference in words. *Neugebauer*, 330 F.2d at 356 n.4 (“In the construction of words, not the mere words, but the thing and the meaning, are to be inquired after.”).

b) Reason to Combine & Expectation of Success

As explained earlier, Petitioner asserts that a person of ordinary skill in the art would look to improve Bell’s video stabilization technique by including Shi’s motion blur mitigation. Pet. 30.

Patent Owner begins by arguing that there is no reason to combine because Bell’s target market is “narrow” whereas the ’840 patent “is not so limited.” Prelim. Resp. 18–19; *see also id.* at 22–23. It is not clear to us why this distinction is important, even if true, given that claims are defeated by narrow prior art the same as broad prior art. *In re Applied Materials, Inc.*, 692 F.3d 1289, 1298 (Fed. Cir. 2012) (“A reference must be considered for everything that it teaches, not simply the described invention or a preferred embodiment.”), or *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1166 (Fed. Cir. 2006) (explaining that in an obviousness analysis, “the prior art must be considered *as a whole* for what it teaches”).

Patent Owner next argues that there was no reason to include “Shi’s *reactive* blur-handling method to arrive at a system incorporating the *proactive low-light* high-pass parameter as defined in the ’840 Patent.” *Id.* at 19, 22. As we explained in the claim construction section, however, this argument fails because we are not persuaded that the claims require or otherwise define a *proactive* low-light high-pass parameter.

Patent Owner then argues that Bell and Shi are incompatible techniques and would not be combined. Prelim. Resp. 19–20. In particular, Patent Owner argues that Bell preemptively adjusts for future motion, whereas Shi reacts only after blur is detected. *Id.* at 20. On this record, this argument is unpersuasive because Patent Owner has not sufficiently explained the alleged technical incompatibility. Patent Owner’s position

relies on the testimony of Dr. Foroosh, but we do not credit his testimony here because it merely mirrors what Patent Owner has argued, without technical explanation. Ex. 2001 ¶ 65; 37 C.F.R. § 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight”); *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15 (PTAB Aug. 24, 2022) (precedential). In contrast, both Bell and Shi look at future frames for motion smoothing. Ex. 1006, 10:10–16 (describing Bell’s “look-ahead buffer”); Ex. 1007, 1:61–65 (describing Shi’s “use [of] future frames”). Thus, on this record, we are not persuaded that there is a technical incompatibility in the manner Patent Owner alleges.

Patent Owner lastly asserts that Petitioner has not established a reasonable expectation of success, but these arguments are premised on the same unpersuasive arguments about the claim being broader than the prior art or the prior art not teaching the (unclaimed) “proactive approach to low-light conditions.” Prelim. Resp. 21–23.

Reviewing the Petition and Patent Owner’s arguments against, we determine that Petitioner has made a sufficient showing of a reason to combine because Shi identifies motion blur problems in video stabilization devices such as in Bell and the ’840 patent, and describes a method for addressing that problem. Ex. 1007, 1:5–32, 17:59–63; Ex. 1006, 1:7–8; Ex. 1001, 1:6–7; *see also Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1380–81 (Fed. Cir. 2023) (holding that a showing that there was a *known* problem in the art solved by a *similar device* in effectively the *same way* was enough to establish a reason to combine).

c) Objective Indicia

Patent Owner asserts that objective indicia establish non-obviousness. Prelim. Resp. 23–31. Patent Owner’s position is underpinned by its evidence purporting to show its “dominant position in the U.S. action camera market,” based on its “HyperSmooth technology” that it asserts “has garnered widespread industry recognition.” *See generally id.* However, even if we were to accept Patent Owner’s argument that it has a revolutionary and successful product, that does not mean that all claims of its patents would have been non-obvious. For us to give substantial weight to objective indicia of non-obviousness, a proponent must establish a nexus between the evidence and the merits of the *claimed* invention. *ClassCo, Inc., v. Apple, Inc.*, 838 F.3d 1214, 1220 (Fed. Cir. 2016). “[T]here is no nexus unless the evidence presented is ‘reasonably commensurate with the scope of the claims.’” *Id.* (quoting *Rambus Inc. v. Rea*, 731 F.3d 1248, 1257 (Fed. Cir. 2013)); *see also Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010) (“For objective evidence of secondary considerations to be accorded substantial weight, its proponent must establish a nexus between the evidence and the merits of the claimed invention.”) (cleaned up).

Patent Owner here has not attempted a nexus analysis in its Preliminary Response. At best, it improperly incorporates by reference a claim chart (Exhibit 2016) served in the related ITC proceeding. Prelim. Resp. 25; 37 C.F.R. § 42.6(a)(3) (“Arguments must not be incorporated by reference from one document into another document.”). Even then, the claim chart appears to admit that claim 1 does not read on Patent Owner’s

technology. Ex. 2016, 30.² On this record, we cannot determine whether, or the extent to which, Patent Owner’s assertions of non-obviousness are due to the claimed invention because of the failure to show nexus to the subject matter of the claims.

5. Conclusion for the Bell & Shi Ground

In summary, we determine on this limited record that Petitioner has shown sufficiently that Shi discloses the low-light high-pass parameter of claim 1 and that there would have been a reason to combine Bell and Shi. We adopt Petitioner’s remaining unchallenged assertions regarding claim 1 as our own. We are not persuaded by Patent Owner’s objective indicia analysis, which is lacking a showing of nexus. In conclusion, we determine that Petitioner has demonstrated a reasonable likelihood of success in showing that the subject matter of claim 1 of the ’840 patent would have been obvious in view of Bell and Shi. No issue unique to any of the other claims in this ground is raised at this time.

E. Remaining Grounds

None of the remaining grounds have any unique issue to address at this time. *See* Prelim. Resp. 21 (“these combinations fail for the same reason as Ground 1”).

² Exhibit 2016 has been filed under seal. Therefore, we have not provided a quote from the exhibit in an abundance of caution, and because we need not disclose the specific language for the public to understand the reasons behind our conclusion that Patent Owner’s nexus analysis is deficient at this stage of the proceeding.

III. CONCLUSION

For the reasons given above, we determine that Petitioner has established a reasonable likelihood of success in showing that at least one claim of the '840 patent would have been obvious in view of the prior art cited. Accordingly, we institute *inter partes* review of all claims and grounds raised in the Petition. 37 C.F.R. § 42.108(a).

IV. ORDER

In consideration of the foregoing, it is hereby

ORDERED that the Petition requesting *inter partes* review of claims 1–21 of the '840 patent is *granted*; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(a), the *inter partes* review of the '840 patent commences on the entry date of this Decision, and pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial.

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